

(7-1-98) RFED FILE  
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MRID No. 444577-28

DATA EVALUATION RECORD  
§ 71-4 -- AVIAN REPRODUCTION TEST

1. CHEMICAL: Prohexadione Calcium PC Code No.: 112600

2. TEST MATERIAL: Prohexadione-calcium tech. Purity: 91.1%

3. CITATION:

Authors: J.B. Beavers, K. Chafey, L.R. Mitchell,  
and M. Jaber

Title: Prohexadione-Calcium Tech.: A  
Reproduction Study with the Mallard

Study Completion Date: February 9, 1996

Laboratory: Wildlife International Ltd., Easton, MD

Sponsor: BASF Aktiengesellschaft, Ludwigshafen,  
Germany

Laboratory Report ID: 147-166

MRID No.: 444577-28

DP Barcode: D245631

4. REVIEWED BY: Max Feken, M.S., Environmental Toxicologist,  
Golder Associates Inc.

Signature:

Date:

APPROVED BY: Pim Kosalwat, Ph.D, Senior Scientist,  
Golder Associates Inc.

Signature:

Date:

5. APPROVED BY: Brian Montague, Fisheries Biologist  
Environmental Fate and Effects Division

Signature: Date:

6. STUDY PARAMETERS:

Scientific Name of Test Organism: *Anas platyrhynchos*

Age of Test Organisms at Test Initiation: 23 weeks

Definitive Study Duration: 23 weeks

7. CONCLUSIONS: This study is scientifically sound but does not meet the guideline requirements for an avian reproduction study using mallards. Egghatch to number of eggs laid ratios were very low in control birds (39% hatch success) suggesting problems during the incubation process. When compared to the controls, there were no significant treatment related effects on any of the parameters measured at any concentrations tested (i.e., 100, 500, and 1000 ppm ai).

DATA EVALUATION RECORD  
S 71-4 -- AVIAN REPRODUCTION TEST1. CHEMICAL: Prohexadione Calcium PC Code No.: 1126002. TEST MATERIAL: Prohexadione-calcium tech. Purity: 91.1%3. CITATION:

Authors: J.B. Beavers, K. Chafey, L.R. Mitchell,  
and M. Jaber

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Definitive Study Duration: 23 weeks

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**Results Synopsis**

Most sensitive endpoints: None were affected

NOEC: 1000 ppm ai

LOEC: >1000 ppm ai

**8. ADEQUACY OF THE STUDY:**

A. Classification: Supplemental

B. Rationale: The percentage of normal hatchlings of eggs laid, eggs set, and viable embryos in the control group was unacceptably low. This may have been due to inadequate conditions of the test, particularly the incubator and/or the hatcher.

C. Repairability: No.

**9. GUIDELINE DEVIATIONS:**

Max Rate = 1.67 lb ai/A

- X 1. The maximum expected residue level was not reported.
- 2. The temperature of the study room (18.6°C) was lower than recommended (21°C).

**10. SUBMISSION PURPOSE:****11. MATERIALS AND METHODS:****A. Test Organisms**

Guideline Criteria	Reported Information
<u>Species</u> A wild waterfowl species, preferably the mallard ( <i>Anas platyrhynchos</i> ), or an upland game species, preferably the northern bobwhite ( <i>Colinus virginianus</i> )	Mallard ( <i>Anas platyrhynchos</i> )
<u>Age at beginning of test</u> Birds should be approaching their first breeding season.	23 weeks old; birds were approaching their first breeding season.
<u>Supplier</u> All birds should be from the same source.	Whistling Wings, Inc. Hanover, Illinois
<u>Were birds pen-reared?</u>	Yes

Guideline Criteria	Reported Information
Were birds phenotypically indistinguishable from wild birds?	Yes
<u>Health observation period</u> 2 to 6 weeks.	6 weeks
Were birds healthy and without excessive mortality prior to the test?	Yes

**B. Test System**

Guideline Criteria	Reported Information
Were pens for adult birds of adequate size and designed to conform to good husbandry practices?	Yes
Were pens for chicks of adequate size and designed to conform to good husbandry practices?	Yes
Were pens constructed of a nonbinding material such as galvanized or stainless steel?	Yes
Was adequate ventilation provided?	Yes
<u>Temperature</u> Approx. 21°C (70°F)	Mean: 18.6°C SD: 1.1°C
<u>Relative humidity</u> Approx. 55%	Mean: 41% SD: 16%
<u>Lighting</u> <u>First 8 weeks:</u> 7 h per day. <u>Thereafter:</u> 16-17 h per day. At least 6 footcandles at bird level.	First 9 weeks: 8 h per day. Thereafter: 17 h per day. Mean illumination: 349 lux.
<u>Diet</u> A commercial breeder feed (or its equivalent) that is appropriate for the test species.	27% protein minimum 2.5% fat minimum 5% fiber maximum 5% limestone (adult diet only)

Guideline Criteria	Reported Information
<b><u>Preparation of test diet</u></b> A premixed containing the test substance should be mechanically mixed with basal diet. If an evaporative vehicle is used, it must be completely evaporated prior to feeding.	Test diets were prepared by mixing the test substance into a premix which was used for weekly preparation of the final diet.
<b><u>Was the premix stored under conditions which maintain stability?</u></b>	Yes
<b><u>Was the diet analyzed to verify homogeneity and stability of the test substance?</u></b>	Yes
<b><u>Replenishment of feed</u></b>	Adult diets were prepared weekly and presented to the birds on Tuesday of each week.  Feed and water were provided <i>ad libitum</i> for the adults and offspring.

### C. Test Design

Guideline Criteria	Reported Information
<b><u>Nominal concentrations</u></b> At least two concentrations other than the control are required; three or more are strongly recommended. The highest test concentrations should show a significant effect or be at or above the maximum field residue level.	Nominal concentrations: Control, 100, 500, and 1000 ppm ai.  Max. residue level: <del>not reported</del> As per conversation with AD $1.67 \text{ lb ai/A} \times 240 = 400.8 \text{ ppm}$ Expected max.
<b><u>Control</u></b> Vehicle control.	Basal diet
<b><u>Vehicle</u></b> Corn oil or other appropriate vehicle.	No vehicle was used.

Guideline Criteria	Reported Information
<u>Vehicle amount (% of diet by weight)</u> Not more than 2%.	N/A
<u>Number of birds per pen</u> One male and 1 female per pen is strongly recommended. For quail, 1 male and 2 females may be acceptable. For ducks, 2 males and 5 females may be acceptable.	1 male and 1 female per pen
<u>Number of pens per group</u> At least 5 replicate pens are required for mallards housed in groups of 7. For other arrangements, at least 12 pens are required, but considerably more may be needed if birds are kept in pairs.	16 pens per group
<u>Pre-laying exposure duration</u> At least 10 weeks prior to the onset of egg-laying.	10 weeks
<u>Exposure duration with egg-laying</u> At least 10 weeks.	12 weeks
<u>Withdrawal period</u> If reduced reproduction is evident, a withdrawal period of up to 3 weeks may be added to the test phase.	N/A

#### D. Egg Collection and Incubation

Guideline Criteria	Reported Information
<u>Were eggs collected daily?</u>	Yes
<u>Egg storage temperature</u> Approximately 16°C (61°F)	12.9 ±0.5°C
<u>Egg storage humidity</u> Approximately 65%	54 ±14%
<u>Were eggs set weekly?</u>	Yes

Guideline Criteria	Reported Information
<b>Were eggs candled for cracks prior to being set for incubation on Day 0?</b>	Yes
<b>Candling for fertility</b> Quail: approx. Day 11 Ducks: approx. Day 14	Eggs were candled on Day 14 for embryo viability and on Day 21 for embryo survival.
<b>Transfer of eggs to hatcher</b> Bobwhite: Day 21 Mallard: Day 23	Eggs were transferred on Day 24.
<b>Hatching temperature</b> 39°C (102°F) is recommended	37.2°C
<b>Hatching humidity</b> 70% is recommended	76%
<b>Day after egg set that chicks were removed and counted</b> Bobwhite: Day 24 Mallard: Day 27	Chicks were removed and counted on Day 27.

#### E. Eggshell Thickness Measurement

Guideline Criteria	Reported Information
<b>Collection Schedule</b> At least once every two weeks (Week 1, 3, 5, 7 and 9).	One egg was collected for eggshell thickness measurement from each of the odd numbered pens during odd numbered weeks and from each of the even numbered pens during even numbered weeks.
<b>Were shells opened, washed, and air dry for at least 48 hours before measuring?</b>	Yes; shells air dried for 1 week.
<b>Measurement</b> 3-4 measurements per eggs to the nearest 0.01 mm.	5 measurements to the nearest 0.005 mm

12. REPORTED RESULTS:

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Did diet analysis verify the concentrations of test material?	Yes
Did diet analysis show that the test substance was stable and homogeneous?	Yes
Were body weights of adults reported for test initiation and biweekly up to week 8 or the onset of egg laying?	Yes
Was average food consumption of adults reported at least biweekly?	Yes
<b>Reproductive Endpoints</b> The following endpoints should be reported: <ul style="list-style-type: none"> <li>• Eggs laid</li> <li>• Eggs cracked</li> <li>• Eggs set</li> <li>• Viable embryos</li> <li>• Live 3-week embryos</li> <li>• Normal hatchlings</li> <li>• 14-day-old survivors</li> <li>• Weights of 14-day-old survivors</li> <li>• Egg shell thickness</li> <li>• Total food consumption</li> <li>• Initial and final body weights, by sex</li> </ul>	All endpoints listed at left plus hatchling weight and maximum number of eggs set and eggs laid.
Were data reported by pen for all endpoints?	Yes

Significant Results: There were no overt signs of toxicity or treatment related mortalities at any test concentration (100, 500 and 1000 ppm ai). When compared to the control, there were no treatment related reductions in adult body weights or feed consumption at any concentration level. There were no significant treatment related effects on any reproductive parameter measured at any concentration tested when compared to the control.

**13. VERIFIED STATISTICAL RESULTS:**

**Means of Endpoints**

Endpoint	Control	100 ppm	500 ppm	1000 ppm
Eggs laid (EL)	58 (13)	55 (15)	57 (12)	54 (25)
Eggs cracked (EC)	0.8 (1.0)	1.1 (2.3)	0.8 (1.6)	0.4 (0.5)
Eggs set (ES)	51 (12)	47 (16)	50 (12)	48 (23)
Viable embryos (VE)	47 (17)	39 (19)	47 (11)	44 (21)
Live 3-wk embryos (LE)	46 (17)	38 (19)	47 (11)	43 (20)
Normal hatchlings (NH)	18 (13)	17 (11)	21 (14)	20 (15)
14-day-old survivors (HS)	17 (12)	16 (10)	20 (13)	20 (15)
Egg shell thickness (THICK)	0.345 (0.016)	0.350 (0.018)	0.352 (0.020)	0.353 (0.021)
Hatchling weight (HATWT)	34.5 (2.7)	36.1 (2.0)	36.2 (2.6)	35.8 (2.9)
14-day-old survivor weight (SURVWT)	295 (30)	284 (24)	287 (26)	295 (23)
Mean food consumption (FOOD)	143 (25)	143 (25)	132 (17)	137 (18)
Final weight of males (POSTM)	1284 (110)	1267 (84)	1247 (131)	1299 (100)
Final weight of females (POSTF)	1180 (93)	1198 (121)	1195 (86)	1190 (75)

Statistically Significant Endpoints: None

14. **REVIEWER'S COMMENTS:** Although there were no significant treatment related effects on any of the reproductive parameters measured at any concentration when compared to the control, the percentage of normal hatchlings of eggs laid, eggs set, and live 3-week embryos in the control was remarkably low (30.9, 34.6, and 39.6%, respectively). From 30 previous studies reviewed (Attachment A), many of which were from Wildlife International Ltd., the mean percentage of normal hatchlings of live 3-week embryos was 77% with a 95% confidence interval of 73 to 80%. The lowest percentage out of the 30 studies was 52%, 12% higher than in this study. From these comparisons, it appears that the low hatching success is probably associated with the incubator and/or the hatcher. The authors even state in their description of individual reproductive parameters (Appendix I) that the number of hatchlings is a "frequently affected parameter which is also highly sensitive to the conditions of incubation, such as rate and angle of rotation, humidity, and temperature."

When compared to the control, there were no significant treatment related effects on any of the parameters measured at any concentration tested (i.e., 100, 500, and 1000 ppm ai). This study is scientifically sound but does not fulfill the guideline requirements for an avian reproduction test using mallard ducks due to the low overall hatching success in the control. The study is classified as Supplemental.

Attachment A:  
Mallard Reproduction Studies

4/15/98		Mallard Data					
N=30	Mean	SE	Min	Max	95% CI	Lower	Upper
EL	48.01633	1.446459	31	63.88	2.83644	45.17989	50.85277
EC	0.920667	0.140937	0.13	3.2	0.276371	0.644295	1.197038
ES	42.28133	1.338148	26.56	56.06	2.624046	39.65729	44.90538
VE	36.98233	1.226379	24	49.19	2.404873	34.57746	39.38721
LE	35.87667	1.199044	22.5	48.69	2.35127	33.5254	38.22794
NH	27.97	1.03658	17.94	38.81	2.032685	25.93731	30.00269
HS	27.23067	1.04961	16.44	37.94	2.058237	25.17243	29.2889
ES/EL (%)	86.67833	0.535599	80.93	92.01	1.050286	85.62805	87.72862
(EL-EC)/EL	98.10033	0.271129	93.31	99.74	0.531671	97.56866	98.632
VE/ES (%)	87.639	1.009763	75.08	94.13	1.980099	85.6589	89.6191
LE/VE (%)	95.686	0.96775	78.01	99.72	1.897713	93.78829	97.58371
NH/EL (%)	57.14933	1.515314	39	71.53	2.97146	54.17787	60.12079
NH/ES (%)	65.73233	1.684029	45.8	80.3	3.302304	62.43003	69.03464
NH/LE (%)	76.86967	1.791998	52.45	93.77	3.514026	73.35564	80.38369
HS/ES (%)	63.92333	1.726273	42.06	78.79	3.385142	60.53819	67.30848
HS/NH (%)	97.062	0.354896	92.35	99.43	0.695935	96.36606	97.75794
THICK	0.374379	0.003581	0.32	0.402	0.007023	0.367356	0.381402
HATWT	35.82379	0.469982	30.27	41.14	0.921973	34.90182	36.74577
SURVWT	265.9486	7.081746	154.4	316.63	13.89241	252.0562	279.841
FOOD	139.3346	3.383406	97.47	161.07	6.632725	132.7019	145.9673
POSTM	1216.807	7.825608	1096.17	1282.06	15.34566	1201.461	1232.153
POSTF	1178.571	9.010555	1077	1277.71	17.66928	1160.901	1196.24

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Compiled by Max Feken

L E B E S L	E E E V L N H C W K T D	H A R I T V O W H C W K T	S U R S P R S T M M E T F F	P O R E T R S T E M M E T F F	P O R S T R S T E M M E T F F		
1 CONTROL	55 0 50 45 44 32 31 0.364	35 325 132.5	959 1302 863	1007			
2 CONTRDL	29 1 24 21 21 2 2 0.341	33 282 141.3	1168 1269 1045	1122			
3 CONTROL	70 0 65 63 63 35 32 0.365	35 358 128.1	1142 1283 968	1164			
4 CONTROL	53 0 42 2 2 1 1 0.358	33 251 151.7	1271 1532 1163	1203			
5 CONTROL	61 3 53 52 52 31 17 16 0.367	35 293 122.4	1367 1273 1056	1262			
6 CONTROL	72 1 65 62 61 15 15 0.343	35 309 155.4	1041 1239 1114	1326			
7 CONTROL	51 0 47 43 43 31 27 0.341	29 263 118.3	1274 1454 984	1096			
8 CONTROL	51 1 45 44 44 22 21 0.342	31 294 128.3	1197 1224 1186	1092			
9 CONTROL	37 0 31 31 31 17 15 0.347	36 301 117.4	1096 1252 1065	1229			
10 CONTROL	59 0 53 51 51 12 11 0.352	33 270 129.3	1309 1255 1240	1080			
11 CONTROL	72 0 66 65 63 34 32 0.319	35 298 134.4	1299 1449 1089	1279			
12 CONTROL	58 3 46 44 43 5 4 0.308	33 266 123.2	1195 1153 1073	1249			
13 CONTROL	73 1 65 63 62 27 25 0.359	41 334 149.1	1229 1177 1183	1329			
14 CONTROL	72 1 62 60 52 4 4 0.339	38 269 203.7	1155 1228 1216	1175			
15 CONTROL	66 1 60 58 57 35 35 0.337	34 271 164.2	1193 1137 953	1116			
16 CONTROL	56 1 47 43 41 4 4 0.339	36 333 185.3	1206 1318 908	1155			
17 TRT1	55 0 49 0 0 0 0 0.348	.	103.2 1030 1234	1082 1292			
18 TRT1	22 3 8 6 6 3 3 0.352	34 286 104.9	1194 1371 1198	1340			
19 TRT1	61 1 53 49 48 15 14 0.359	40 305 143.6	1251 1308 1165	1452			
20 TRT1	66 1 60 60 60 30 29 0.352	34 266 123.4	1269 1286 1028	1058			
21 TRT1	80 1 73 68 67 32 30 0.359	36 301 172.7	1215 1278 1020	1205			
22 TRT1	59 0 51 49 49 40 34 0.330	35 292 168.6	1217 1174 1054	1198			
23 TRT1	71 0 65 63 63 28 27 0.355	37 248 133.0	1260 1249 1181	1369			
24 TRT1	63 9 47 30 24 5 5 0.327	33 290 125.0	1266 1319 1083	1273			
25 TRT1	37 1 32 29 28 8 8 0.364	37 285 191.6	1257 1339 1065	1057			
26 TRT1	45 0 40 28 28 19 19 0.397	36 302 125.7	1142 1419 1202	1210			
27 TRT1	70 2 63 48 48 17 17 0.331	37 265 174.5	1133 1272 986	1117			
28 TRT1	54 0 45 39 29 4 4 0.363	35 261 151.0	1085 1119 1064	1089			
29 TRT1	63 0 58 53 53 18 17 0.343	35 262 139.4	1291 1341 1118	1194			
30 TRT1	43 0 36 35 35 15 14 0.360	37 328 144.0	1327 1213 949	1073			
31 TRT1	41 0 33 32 32 19 18 0.334	40 311 138.2	1139 1230 946	1166			
32 TRT1	50 0 42 41 41 20 18 0.327	35 276 142.8	1019 1127 958	1076			
33 TRT2	65 2 58 57 57 10 10 0.374	34 244 143.4	1060 1094 1022	1170			
34 TRT2	52 0 46 41 37 4 4 0.344	34 266 121.7	1084 1086 1012	1263			
35 TRT2	67 0 60 58 56 27 26 0.345	36 297 114.2	1049 1152 1044	1252			
36 TRT2	58 2 49 48 47 17 16 0.361	37 291 159.0	990 1073 1275	1367			
37 TRT2	59 0 54 53 53 44 41 0.363	36 305 115.1	1249 1403 984	1215			
38 TRT2	54 0 47 45 45 22 22 0.386	38 303 153.3	1051 1174 1020	1175			
39 TRT2	65 0 57 51 51 39 36 0.329	37 280 154.8	1280 1407 1260	1237			
40 TRT2	64 1 58 56 56 33 31 0.367	40 310 134.7	1226 1439 1094	1252			
41 TRT2	29 1 22 21 19 8 7 0.323	34 293 115.8	1097 1162 1021	1132			
42 TRT2	70 0 64 59 58 29 29 0.366	38 310 149.3	1283 1468 1139	1169			
43 TRT2	45 0 41 39 37 8 7 0.332	35 277 112.8	1394 1274 1094	1078			
44 TRT2	.	.	1212	1020			
45 TRT2	59 0 53 46 46 15 13 0.323	31 225 121.3	1170 1224 942	1034			
46 TRT2	36 0 31 31 31 10 10 0.366	38 328 111.8	1127 1224 1083	1112			
47 TRT2	53 0 46 45 45 10 10 0.330	41 280 129.0	1146 1247 1188	1289			
48 TRT2	73 6 61 60 60 43 43 0.365	34 308 146.4	1391 1275 1009	1181			
49 TRT3	78 0 68 63 61 34 33 0.325	35 298 143.0	1132 1343 999	1160			
50 TRT3	66 1 56 52 51 19 18 0.355	32 309 132.3	988 1143 1071	1145			
51 TRT3	70 1 62 57 56 15 15 0.377	38 280 162.7	1252 1341 1080	1167			
52 TRT3	63 1 56 53 53 29 27 0.342	34 314 124.8	1255 1203 1174	1138			
53 TRT3	45 0 40 40 37 12 12 0.340	39 290 137.1	1018 1277 1197	1230			
54 TRT3	79 0 70 63 62 27 25 0.384	35 316 168.2	1276 1273 997	1081			
55 TRT3	0 0 0 0 0 0 0 0	.	121.3 1171 1156	1032 1354			
56 TRT3	40 1 34 33 31 9 8 0.339	37 246 130.7	1163 1246 1136	1300			
57 TRT3	42 1 37 31 30 12 11 0.344	37 289 118.1	1162 1372 1039	1261			
58 TRT3	1 0 0 0 0 0 0 0.378	.	118.7 1389 1381	1033 1233			
59 TRT3	64 0 58 57 56 15 15 0.383	33 291 143.6	1200 1244 1198	1172			

L E B E S L	E E E V L N H C W K T D	H A R I T V O W H C W K T	S U R S P R S T M M E T F F	P O R E T R S T E M M E T F F	P O R S T R S T E M M E T F F		
60 TRT3	60 1 54 50 50 40 39 0.358	32 322 122.4	1246 1323 1045	1080			
61 TRT3	61 TRT3	49 0 43 42 42 6 6 0.353	36 260 130.6	1391 1547 1078	1180		
62 TRT3	62 TRT3	71 0 63 59 58 38 37 0.320	36 302 130.7	1243 1347 978	1155		
63 TRT3	63 TRT3	80 0 74 62 62 51 48 0.347	42 319 171.0	1079 1285 982	1197		

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 09:43 Thursday, June 25, 1998

LEVEL	CONTROL	TRT1	TRT2	TRT3
	MEAN	MEAN	MEAN	MEAN
EL	58.44	55.00	56.60	53.87
EC	0.81	1.13	0.80	0.40
ES	51.31	47.19	49.80	47.67
VE	46.69	39.38	47.33	44.13
LE	45.56	38.19	46.53	43.27
NH	18.31	17.06	21.27	20.47
HS	17.19	16.06	20.33	19.60
ES/EL (%)	87.37	83.50	87.55	82.12
(EL-EC)/EL (%)	98.57	97.63	98.68	99.21
VE/ES (%)	89.64	82.76	95.18	92.99
LE/VE (%)	97.97	96.49	97.89	97.79
NH/EL (%)	30.90	30.26	35.82	33.67
NH/ES (%)	34.58	36.13	40.88	40.81
NH/LE (%)	39.64	43.77	43.50	45.26
HS/ES (%)	32.34	34.14	38.97	39.05
HS/NH (%)	94.47	95.85	95.43	95.93
THICK	0.35	0.35	0.35	0.35
HATWT	34.50	36.07	36.20	35.85
SURVWT	294.81	283.87	287.40	295.08
FOOD	142.79	142.60	132.17	137.01
POSTM	1284.06	1267.44	1246.80	1298.73
POSTF	1180.25	1198.06	1195.07	1190.20

12

## LEVEL=CONTROL

Variable Label	N	Mean	Std Dev	CV
EL	16	58.438	12.770	21.852
EC	16	0.813	0.981	120.747
ES	16	51.313	12.451	24.265
VE	16	46.688	17.130	36.690
LE	16	45.563	16.533	36.286
NH	16	18.313	12.774	69.753
HS	16	17.188	12.062	70.180
THICK	16	0.345	0.016	4.666
HATWT	16	34.500	2.733	7.920
SURVWT	16	294.813	30.470	10.335
FOOD	16	142.788	24.609	17.235
PREM	16	1193.813	103.610	8.679
POSTM	16	1284.063	109.636	8.538
PREF	16	1069.125	112.194	10.494
POSTF	16	1180.250	93.391	7.913
ES_EL	16	87.369	4.422	5.062
NH_EL	16	30.902	20.840	67.439
ENC_EL	16	98.566	1.732	1.757
VE_ES	16	89.635	22.889	25.535
NH_ES	16	34.579	22.768	65.844
HS_ES	16	32.338	21.178	65.490
LE_VE	16	97.975	3.318	3.387
NH_LE	16	39.637	22.616	57.059
HS_NH	16	94.474	5.852	6.195

## LEVEL=TRT1

Variable Label	N	Mean	Std Dev	CV
EL	16	55.000	14.801	26.911
EC	16	1.125	2.277	202.373
ES	16	47.188	15.795	33.474
VE	16	39.375	18.822	47.801
LE	16	38.188	19.139	50.118
NH	16	17.063	11.399	66.805
HS	16	16.063	10.299	64.116
THICK	16	0.350	0.018	5.214
HATWT	15	36.067	2.017	5.591
SURVWT	15	283.867	24.204	8.527
FOOD	16	142.600	24.676	17.304
PREM	16	1193.438	92.843	7.779
POSTM	16	1267.438	85.793	6.611
PREF	16	1068.688	86.387	8.083
POSTF	16	1198.063	120.567	10.064
ES_EL	16	83.505	13.404	16.052
NH_EL	16	30.262	17.691	58.462
ENC_EL	16	97.632	4.636	4.748
VE_ES	16	82.757	24.677	29.818
NH_ES	16	36.128	19.723	54.593
HS_ES	16	34.135	17.589	51.527
LE_VE	15	96.493	7.979	8.269
NH_LE	15	43.769	17.639	40.299
HS_NH	15	95.846	4.445	4.637

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
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## LEVEL=TRT2

Variable Label	N	Mean	Std Dev	CV
EL	15	56.600	12.328	21.780
EC	15	0.800	1.612	201.556
ES	15	49.800	11.608	23.309
VE	15	47.333	11.043	23.331
LE	15	46.533	11.495	24.702
NH	15	21.267	13.688	64.362
HS	15	20.333	13.162	64.731
THICK	15	0.352	0.020	5.806
HATWT	15	36.200	2.624	7.249
SURVWT	15	287.400	26.438	9.199
FOOD	15	132.173	17.356	13.131
PREM	16	1175.563	121.925	10.372
POSTM	15	1246.800	130.766	10.488
PREF	16	1075.438	96.230	8.948
POSTF	15	1195.067	86.219	7.215
ES_EL	15	87.554	4.059	4.636
NH_EL	15	35.822	18.988	53.007
ENC_EL	15	98.683	2.349	2.380
VE_ES	15	95.180	3.959	4.159
NH_ES	15	40.881	21.248	51.976
HS_ES	15	38.966	20.327	52.166
LE_VE	15	97.891	3.429	3.502
NH_LE	15	43.502	21.955	50.468
HS_NH	15	95.434	5.129	5.374

## LEVEL=TRT3

Variable Label	N	Mean	Std Dev	CV
EL	15	53.889	25.289	46.948
EC	15	0.400	0.507	126.773
ES	15	47.667	22.768	47.765
VE	15	44.133	20.653	46.797
LE	15	43.267	20.475	47.322
NH	15	20.467	15.362	75.057
HS	15	19.600	14.672	74.855
THICK	14	0.353	0.021	5.858
HATWT	13	35.846	2.853	7.960
SURVWT	13	295.077	22.893	7.758
FOOD	15	137.013	17.551	12.810
PREM	16	1200.000	112.512	9.376
POSTM	15	1298.733	100.473	7.736
PREF	16	1075.688	76.904	7.149
POSTF	15	1190.200	75.272	6.324
ES_EL	14	82.121	23.719	28.883
NH_EL	14	33.670	19.034	56.533
ENC_EL	14	99.209	0.992	1.000
VE_ES	13	92.993	4.988	5.364
NH_ES	13	40.808	18.592	45.559
HS_ES	13	39.053	17.844	45.692
LE_VE	13	97.794	2.336	2.388
NH_LE	13	45.258	21.115	46.654
HS_NH	13	95.926	3.693	3.850

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
1. ANALYSIS OF EGGS LAIO

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09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

## Effect Coefficients

INTERCEPT 0

LEVEL CONTROL L2  
TRT1 L3  
TRT2 L4  
TRT3 -L2-L3-L4

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: EL

Source	DF	Sum of Squares		Mean Square	F Value	Pr > F
Model	3	184.72917		61.57639	0.21	0.8874
Error	58	16813.27083		289.88398		
Corrected Total	61	16998.00000				

R-Square C.V. Root MSE EL Mean  
0.010868 30.40353 17.026 56.000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	184.72917	61.57639	0.21	0.8874

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	EL	Pr >  T	HO: LSMEAN(i)=LSMEAN(j)				
			i/j	1	2	3	
CONTROL	58.4375000	1	0.5702	0.7650	0.4581		
TRT1	55.0000000	2	0.5702	0.7947	0.8537		
TRT2	56.6000000	3	0.7650	0.7947	0.6618		
TRT3	53.8666667	4	0.4581	0.8537	0.6618		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EL

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 289.884

Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit
CONTROL - TRT2	-14.348	1.837	18.023	
CONTRL - TRT1	-12.485	3.438	19.360	
CONTRL - TRT3	-11.615	4.571	20.757	
TRT2 - CONTRL	-18.023	-1.837	14.348	
TRT2 - TRT1	-14.586	1.600	17.786	
TRT2 - TRT3	-13.711	2.733	19.178	
TRT1 - CONTROL	-19.360	-3.438	12.485	
TRT1 - TRT2	-17.786	-1.600	14.586	
TRT1 - TRT3	-15.052	1.133	17.319	
TRT3 - CONTROL	-20.757	-4.571	11.615	
TRT3 - TRT2	-19.178	-2.733	13.711	
TRT3 - TRT1	-17.319	-1.133	15.052	

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: EL

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 289.884

Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-14.736	-1.837	11.061	
TRT1 - CONTROL	-16.127	-3.438	9.252	
TRT3 - CONTROL	-17.470	-4.571	8.328	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

## Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

## Dependent Variable: EC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	4.0866935	1.3622312	0.60	0.6191

Error	58	132.1875000	2.2790948
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Corrected Total	61	136.2741935
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R-Square	C.V.	Root MSE	EC Mean
0.029989	191.0191	1.5097	0.7903

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	4.0866935	1.3622312	0.60	0.6191

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Least Squares Means

LEVEL	EC LSMEAN	Pr >  T  i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	0.81250000	1	0.5605 0.9817 0.4502
TRT1	1.12500000	2	0.5605 0.5515 0.1867
TRT2	0.80000000	3	0.9817 0.5515 0.4710
TRT3	0.40000000	4	0.4502 0.1867 0.4710

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EC

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 2.279095  
 Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit
	TRT1	- CONTROL	-1.0993	0.3125	
TRT1	- TRT2	-1.1102	0.3250	1.7602	
TRT1	- TRT3	-0.7102	0.7250	2.1602	
CONTROL	- TRT1	-1.7243	-0.3125	1.0993	
CONTROL	- TRT2	-1.4227	0.0125	1.4477	
CONTROL	- TRT3	-1.0227	0.4125	1.8477	
TRT2	- TRT1	-1.7602	-0.3250	1.1102	
TRT2	- CONTROL	-1.4477	-0.0125	1.4227	
TRT2	- TRT3	-1.0581	0.4000	1.8581	
TRT3	- TRT1	-2.1602	-0.7250	0.7102	
TRT3	- CONTROL	-1.8477	-0.4125	1.0227	
TRT3	- TRT2	-1.8581	-0.4000	1.0581	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 2. ANALYSIS OF EGGS CRACKED  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: EC

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 2.279095  
 Critical Value of Dunnett's T= 2.108

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Comparisons significant at the 0.05 level are indicated by '\*\*\*\*'.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit									
	TRT1	- CONTROL	-0.8126	0.3125	1.4376	TRT2	- CONTROL	-1.1562	-0.0125	1.1312	TRT3	- CONTROL	-1.5562	-0.4125

PRDHEXADIONE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS OF EGGS SET

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Class Level Information

Class	Levels	Values
LEVEL	4	CONTROLD TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PRODHEXADIONE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS OF EGGS SET

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROLD	L2
TRT1	L3	
TRT2	L4	
TRT3	-L2-L3-L4	

PRDHEXADIDNE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS OF EGGS SET

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dependent Variable: ES

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	174.39167	58.13056	0.22	0.8810
Error	58	15211.60833	262.26911		
Corrected Total	61	15386.00000			

R-Square	C.V.	Root MSE	ES Mean
0.011334	33.05046	16.195	49.000

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Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	174.39167	58.13056	0.22	0.8810

PRODHEXADIONE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS OF EGGS SET

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	ES LSMEAN	Pr >  T  i/j	H0: LSMEAN(i)=LSMEAN(j)	1	2	3	4
CONTROL	51.3125000	1	0.4742	0.7959	0.5335		
TRT1	47.1875000	2	0.4742	0.6552	0.9347		
TRT2	49.8000000	3	0.7959	0.6552	0.7196		
TRT3	47.6666667	4	0.5335	0.9347	0.7196		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PRODHEXADIDNE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS DF EGGS SET

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: ES

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 262.2691  
Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by '\*\*\*\*'.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT2	-13.883	1.513	16.908
CONTROLD - TRT3	-11.750	3.646	19.041
CDNTRDL - TRT1	-11.020	4.125	19.270
TRT2 - CONTROL	-16.908	-1.513	13.883
TRT2 - TRT3	-13.508	2.133	17.775
TRT2 - TRT1	-12.783	2.612	18.008
TRT3 - CONTROL	-19.041	-3.646	11.750
TRT3 - TRT2	-17.775	-2.133	13.508
TRT3 - TRT1	-14.916	0.479	15.875
TRT1 - CONTROL	-19.270	-4.125	11.020
TRT1 - TRT2	-18.008	-2.612	12.783
TRT1 - TRT3	-15.875	-0.479	14.916

PRODHEXADIONE-CALCIUM TECH.: REPROD. STUDY WITH THE MALLARD  
3. ANALYSIS OF EGGS SET

\*\*\*\*\*

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## General Linear Models Procedure

## Dunnett's One-tailed T tests for variable: ES

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 262.2691  
Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT2 - CONTROL	-13.782	-1.513	10.757	
TRT3 - CONTROL	-15.915	-3.646	8.623	
TRT1 - CONTROL	-16.195	-4.125	7.945	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTRL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dependent Variable: VE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
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Model	3	617.63293	205.87764	0.69	0.5639
Error	58	17394.25417	299.90093		
Corrected Total	61	18011.88710			
	R-Square	C.V.	Root MSE	VE Mean	
	0.034290	39.05763	17.318	44.339	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	617.63293	205.87764	0.69	0.5639

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	VE LSMEAN	Pr >  T  i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	46.6875000	1	0.2372 0.9177 0.6830
TRT1	39.3750000	2	0.2372 0.2061 0.4477
TRT2	47.3333333	3	0.9177 0.2061 . 0.6147
TRT3	44.1333333	4	0.6830 0.4477 0.6147 .

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Tukey's Studentized Range (HSD) Test for variable: VE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 299.9009  
Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit			Simultaneous Upper Confidence Limit		
	Difference Between Means					
TRT2 - CONTROL	-15.817		0.646		17.109	
TRT2 - TRT3	-13.526		3.200		19.926	
TRT2 - TRT1	-8.505		7.958		24.421	
CONTROL - TRT2		-17.109		-0.646		15.817
CONTROL - TRT3		-13.909		2.554		19.017
CONTROL - TRT1		-8.883		7.313		23.508
TRT3 - TRT2		-19.926		-3.200		13.526
TRT3 - CONTROL		-19.017		-2.554		13.909

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TRT3	- TRT1	-11.705	4.758	21.221
TRT1	- TRT2	-24.421	-7.958	8.505
TRT1	- CONTROL	-23.508	-7.313	8.883

## PROHEXADIDNE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Dunnett's One-tailed T tests for variable: VE

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 299.9009  
Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT2 - CONTROL	-12.474	0.646	13.766	
TRT3 - CONTROL	-15.674	-2.554	10.566	
TRT1 - CONTROL	-20.219	-7.313	5.594	

## PROHEXADIDNE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

## PROHEXADIDNE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
	TRT1	L3
.	TRT2	L4
.	TRT3	-L2-L3-L4

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## PRDHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dependent Variable: LE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	656.84543	218.94848	0.73	0.5363
Error	58	17313.04167	298.50072		
Corrected Total	61	17969.88710			
	R-Square	C.V.	Root MSE		LE Mean
	0.036553	39.86545	17.277		43.339
Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	656.84543	218.94848	0.73	0.5363

## PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Least Squares Means

LEVEL	LSMEAN	Pr >  T	HO: LSMEAN(i)=LSMEAN(j)				
			i/j	1	2	3	4
CONTROL	45.5625000	1	.	0.2322	0.8763	0.7129	
TRT1	38.1875000	2	0.2322	.	0.1842	0.4167	
TRT2	46.5333333	3	0.8763	0.1842	.	0.6066	
TRT3	43.2666667	4	0.7129	0.4167	0.6066	.	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

## PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Tukey's Studentized Range (HSD) Test for variable: LE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 298.5007  
Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
LEVEL Comparison				

TRT2	- CONTROL	-15.454	0.971	17.395
TRT2	- TRT3	-13.421	3.267	19.954
TRT2	- TRT1	-8.079	8.346	24.770
CONTROL	- TRT2	-17.395	-0.971	15.454
CONTROL	- TRT3	-14.129	2.296	18.720
CONTROL	- TRT1	-8.782	7.375	23.532
TRT3	- TRT2	-19.954	-3.267	13.421
TRT3	- CONTROL	-18.720	-2.296	14.129
TRT3	- TRT1	-11.345	5.079	21.504
TRT1	- TRT2	-24.770	-8.346	8.079
TRT1	- CONTROL	-23.532	-7.375	8.782
TRT1	- TRT3	-21.504	-5.079	11.345

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
5. ANALYSIS OF LIVE 3-WEEK EMBRYOS\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Dunnett's One-tailed T tests for variable: LE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 298.5007  
Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by '\*\*\*'.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT2 - CONTROL	-12.118	0.971	14.060	
TRT3 - CONTROL	-15.385	-2.296	10.793	
TRT1 - CONTROL	-20.251	-7.375	5.501	

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
6. ANALYSIS OF NORMAL HATCHLINGS\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
6. ANALYSIS OF NORMAL HATCHLINGS\*\*\*\*\*  
09:43 Thursday, June 25, 1998File:44457728.sas Page 16  
General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

## Effect Coefficients

INTERCEPT	0
LEVEL	CONTROL L2
	TRT1 L3
	TRT2 L4
	TRT3 -L2-L3-L4

## PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Dependent Variable: NH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	173.79704	57.93235	0.33	0.8069
Error	58	10323.04167	177.98348		
Corrected Total	61	10496.83871			
	R-Square	C.V.	Root MSE	NH Mean	
	0.016557	69.39134	13.341	19.226	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	173.79704	57.93235	0.33	0.8069

## PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	NH LSMEAN	Pr >  T  i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	18.3125000	1	0.7919 0.5402 0.6549
TRT1	17.0625000	2	0.7919 0.3842 0.4806
TRT2	21.2666667	3	0.5402 0.3842 0.8701
TRT3	20.4666667	4	0.6549 0.4806 0.8701

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

## PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Tukey's Studentized Range (HSD) Test for variable: NH

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 177.9835  
Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	TRT2 - TRT3	-12.086	0.800	13.686	
TRT2 - CONTROL	-9.728	2.954	15.637		
TRT2 - TRT1	-8.478	4.204	16.887		
TRT3 - TRT2	-13.686	-0.800	12.086		
TRT3 - CONTROL	-10.528	2.154	14.837		
TRT3 - TRT1	-9.278	3.404	16.087		
CONTROL - TRT2	-15.637	-2.954	9.728		
CONTROL - TRT3	-14.837	-2.154	10.528		
CONTROL - TRT1	-11.226	1.250	13.726		
TRT1 - TRT2	-16.887	-4.204	8.478		
TRT1 - TRT3	-16.087	-3.404	9.278		
TRT1 - CONTROL	-13.726	-1.250	11.226		

#### PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

##### 6. ANALYSIS OF NORMAL HATCHLINGS

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

##### Dunnett's One-tailed T tests for variable: NH

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 177.9835  
Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	TRT2 - CONTROL	-7.153	2.954	13.061	
TRT3 - CONTROL	-7.953	2.154	12.261		
TRT1 - CONTROL	-11.193	-1.250	8.693		

#### PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

##### 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

##### Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

#### PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

##### 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

##### Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT	0
LEVEL	CONTROL L2
	TRT1 L3
	TRT2 L4
	TRT3 -L2-L3-L4

#### PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

##### 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Dependent Variable: HS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	187.06263	62.35421	0.39	0.7588
Error	58	9212.30833	158.83290		
Corrected Total	61	9399.37097			
	R-Square	C.V.	Root MSE	HS Mean	
	0.019902	69.08747	12.603	18.242	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	187.06263	62.35421	0.39	0.7588

#### PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

##### 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

##### Least Squares Means

LEVEL	HS LSMEAN	i/j	1	2	3	4
CONTROL	17.1875000	1		0.8016	0.4901	0.5963
TRT1	16.0625000	2	0.8016		0.3496	0.4380
TRT2	20.3333333	3	0.4901	0.3496		0.8739
TRT3	19.6000000	4	0.5963	0.4380	0.8739	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HS

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidences= 0.95 df= 58 MSE= 158.8329  
 Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit			
	TRT2	- TRT3		TRT2	- CONTROL	TRT2	- TRT1
TRT2	- TRT3	-11.439	0.733	12.906			
TRT2	- CONTROL	-8.835	3.146	15.127			
TRT2	- TRT1	-7.710	4.271	16.252			
TRT3	- TRT2	-12.906	-0.733	11.439			
TRT3	- CONTROL	-9.568	2.413	14.393			
TRT3	- TRT1	-8.443	3.538	15.518			
CONTROL	- TRT2	-15.127	-3.146	8.835			
CONTROL	- TRT3	-14.393	-2.413	9.568			
CONTROL	- TRT1	-10.661	1.125	12.911			
TRT1	- TRT2	-16.252	-4.271	7.710			
TRT1	- TRT3	-15.518	-3.538	8.443			
TRT1	- CONTROL	-12.911	-1.125	10.661			

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: HS

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 158.8329  
 Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit			
	TRT2	- CONTROL		TRT3	- CONTROL	TRT1	- CONTROL
TRT2	- CONTROL	-6.402	3.146	12.694			
TRT3	- CONTROL	-7.136	2.413	11.961			
TRT1	- CONTROL	-10.518	-1.125	8.268			

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Class Level InformationClass Levels Values  
 LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 61 observations can be used in this analysis.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Type I Estimable Functions for: LEVELEffect Coefficients  
 INTERCEPT D  
 LEVEL CONTROL L2  
 TRT1 L3  
 TRT2 L4  
 TRT3 -L2-L3-L4

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	198.98218	66.32739	0.62	0.6071
Error	57	6132.38331	107.58567		
Corrected Total	60	6331.36549			
		R-Square	C.V.	Root MSE	RESPONSE Mean
		0.031428	15.30374	10.372	67.777

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	198.98218	66.32739	0.62	0.6071

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr >  T  i/j	HO: LSMEAN(i)=LSMEAN(j)		
			1	2	3
CONTROL	69.4107553	1	0.4825	0.9794	0.2663
TRT1	66.8185077	2	0.4825	0.4737	0.6618
TRT2	69.5074189	3	0.9794	0.4737	0.2629
TRT3	65.1493840	4	0.2663	0.6618	0.2629

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 107.5857  
Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit	
			1	2
TRT2 - CONTROL	-9.769	0.097	9.962	
TRT2 - TRT1	-7.177	2.689	12.554	
TRT2 - TRT3	-5.843	4.358	14.559	
CONTROL - TRT2	-9.962	-0.097	9.769	
CONTROL - TRT1	-7.113	2.592	12.297	
CONTROL - TRT3	-5.784	4.261	14.307	
TRT1 - TRT2	-12.554	-2.689	7.177	
TRT1 - CONTROL	-12.297	-2.592	7.113	
TRT1 - TRT3	-8.377	1.669	11.715	
TRT3 - TRT2	-14.559	-4.358	5.843	
TRT3 - CONTROL	-14.307	-4.261	5.784	
TRT3 - TRT1	-11.715	-1.669	8.377	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 107.5857  
Critical Value of Dunnett's T= 2.110

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

Simultaneous Simultaneous

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-7.769	0.097	7.963
TRT1 - CONTROL	-10.330	-2.592	5.146
TRT3 - CONTROL	-12.271	-4.261	3.748

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

9. ANALYSIS OF Viable EMBRYOS/EGGS SETS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 60 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

9. ANALYSIS OF Viable EMBRYOS/EGGS SETS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

9. ANALYSIS OF Viable EMBRYOS/EGGS SETS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	978.24101	326.08034	1.55	0.2121
Error	56	11791.77491	210.56741		
Corrected Total	59	12770.01592			
	R-Square	C.V.	Root MSE	RESPONSE Mean	
	0.076605	19.63724	14.511	73.895	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
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 LEVEL 3 978.24101 326.08034 1.55 0.2121

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Least Squares Means

LEVEL	RESPONSE	Pr >  T  HO: LSMEAN(i)=LSMEAN(j)				
			LSMEAN i/j	1	2	3
CONTROL	74.3006268	1	0.2015	0.4337	0.7767	
TRT1	67.6699112	2	0.2015	0.0441	0.1370	
TRT2	78.4128789	3	0.4337	0.0441	0.6423	
TRT3	75.8446025	4	0.7767	0.1370	0.6423	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 210.5674  
 Critical Value of Studentized Range= 3.745

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL	Comparison	Simultaneous Lower Difference Simultaneous Upper		
		Confidence Limit	Between Means	Confidence Limit
TRT2	- TRT3	-11.992	2.568	17.128
TRT2	- CONTROL	-9.697	4.112	17.922
TRT2	- TRT1	-3.067	10.743	24.553
TRT3	- TRT2	-17.128	-2.568	11.992
TRT3	- CONTROL	-12.803	1.544	15.891
TRT3	- TRT1	-6.173	8.175	22.522
CONTROL	- TRT2	-17.922	-4.112	9.697
CONTROL	- TRT3	-15.891	-1.544	12.803
CONTROL	- TRT1	-6.954	6.631	20.216
TRT1	- TRT2	-24.553	-10.743	3.067
TRT1	- TRT3	-22.522	-8.175	6.173
TRT1	- CONTROL	-20.216	-6.631	6.954

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 9. ANALYSIS OF Viable EMBRYOS/EGGS SETS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

File:44457728.sas Page 24  
 Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 210.5674  
 Critical Value of Dunnett's T= 2.112

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL	Comparison	Simultaneous Lower Difference Simultaneous Upper		
		Confidence Limit	Between Means	Confidence Limit
TRT2	- CONTROL	-6.904	4.112	15.129
TRT3	- CONTROL	-9.902	1.544	12.989
TRT1	- CONTROL	-17.468	-6.631	4.207

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/Viable EMBRYOS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 59 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/Viable EMBRYOS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2
	TRT1 L3
	TRT2 L4
	TRT3 -L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/Viable EMBRYOS  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	23.027159	7.675720	0.14	0.9353

23

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 Error 55 3005.157612 54.639229

Corrected Total 58 3028.184771

R-Square	C.V.	Root MSE	RESPONSE Mean
0.007604	8.775987	7.3918	84.228

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	23.027159	7.675720	0.14	0.9353

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Least Squares Means

LEVEL	RESPONSE	Pr >  T	H0: LSMEAN(i)=LSMEAN(j)		
	LSMEAN	i/j	1	2	3
CONTROL	84.2618281	1	0.9463	0.8064	0.6875
TRT1	84.4415103	2	0.9463	0.8611	0.6455
TRT2	84.9161130	3	0.8064	0.8611	0.5300
TRT3	83.1458882	4	0.6875	0.6455	0.5300

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 54.63923  
 Critical Value of Studentized Range= 3.747

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT2 - TRT1	-6.676	0.475	7.626	
TRT2 - CONTROL	-6.384	0.654	7.693	
TRT2 - TRT3	-5.651	1.770	9.191	
TRT1 - TRT2	-7.626	-0.475	6.676	
TRT1 - CONTROL	-6.859	0.180	7.218	
TRT1 - TRT3	-6.125	1.296	8.717	
CONTROL - TRT2	-7.693	-0.654	6.384	
CONTROL - TRT1	-7.218	-0.180	6.859	
CONTROL - TRT3	-6.196	1.116	8.428	
TRT3 - TRT2	-9.191	-1.770	5.651	

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 TRT3 - TRT1 -8.717 -1.296 6.125  
 TRT3 - CONTROL -8.428 -1.116 6.196  
 PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NDTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 54.63923  
 Critical Value of Dunnett's T= 2.114

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Between Means	Difference Confidence Limit	Upper Confidence Limit	Lower Confidence Limit
TRT2 - CONTROL	-4.963	0.654	6.272	
TRT1 - CONTROL	-5.438	0.180	5.797	
TRT3 - CONTROL	-6.952	-1.116	4.720	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 59 observations can be used in this analysis.

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 11. ANALYSIS DF NDRMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 11. ANALYSIS DF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares		Mean Square	F Value	Pr > F
Model	3	144.11550	48.03850	0.28	0.8385	
Error	55	9383.87584	170.61592			
Corrected Total	58	9527.99133				
		R-Square	C.V.	Root MSE	RESPONSE Mean	
		0.015125	32.24718	13.062	40.506	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	144.11550	48.03850	0.28	0.8385

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	RESPONSE	Pr >  T	HO: LSMEAN(i)=LSMEAN(j)				
			i/j	1	2	3	4
CONTROL	38.0460583	1	0.5010	0.5376	0.4003		
TRT1	41.2257824	2	0.5010	0.9555	0.8478		
TRT2	40.9584060	3	0.5376	0.9555	0.8059		
TRT3	42.1805404	4	0.4003	0.8478	0.8059		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPDNSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 170.6159  
Critical Value of Studentized Range= 3.747

Comparisons significant at the 0.05 level are indicated by \*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit
TRT3 - TRT1	-12.159	0.955	14.068	
TRT3 - TRT2	-11.891	1.222	14.335	

TRT3 - CONTROL	-8.787	4.134	17.056
TRT1 - TRT3	-14.068	-0.955	12.159
TRT1 - TRT2	-12.369	0.267	12.904
TRT1 - CONTROL	-9.258	3.180	15.617
TRT2 - TRT3	-14.335	-1.222	11.891
TRT2 - TRT1	-12.904	-0.267	12.369
TRT2 - CONTROL	-9.525	2.912	15.350
CONTROL - TRT3	-17.056	-4.134	8.787
CONTROL - TRT1	-15.617	-3.180	9.258
CONTROL - TRT2	-15.350	-2.912	9.525

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 170.6159  
Critical Value of Dunnett's T= 2.114

Comparisons significant at the 0.05 level are indicated by \*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Simultaneous Difference Between Means		Simultaneous Upper Confidence Limit
TRT3 - CONTROL	-6.178	4.134	14.447	
TRT1 - CONTROL	-6.746	3.180	13.106	
TRT2 - CONTROL	-7.014	2.912	12.838	

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 61 observations can be used in this analysis.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

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General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

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Effect Coefficients

INTERCEPT	0	
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	191.06285	63.68762	0.35	0.7895
Error	57	10379.91241	182.10373		
Corrected Total	60	10570.97526			
			R-Square	C.V.	Root MSE
			0.018074	40.40441	13.495
					33.399

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	191.06285	63.68762	0.35	0.7895

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE	Pr >  T	H0: LSMEAN(i)=LSMEAN(j)	i/j	1	2	3	4
	LSMEAN							
CONTROL	32.0137661	1	0.9531	0.4003	0.6939			
TRT1	31.7317296	2	0.9531	.	0.3690	0.6525		
TRT2	36.1237445	3	0.4003	0.3690	.	0.6688		
TRT3	33.9672521	4	0.6939	0.6525	0.6688	.		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPDNSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 182.1037

File:44457728.sas Page 30  
Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - TRT3	-11.115	2.156	15.428
TRT2 - CONTROL	-8.725	4.110	16.945
TRT2 - TRT1	-8.443	4.392	17.227
TRT3 - TRT2	-15.428	-2.156	11.115
TRT3 - CONTROL	-11.116	1.953	15.023
TRT3 - TRT1	-10.834	2.236	15.305
CONTROL - TRT2	-16.945	-4.110	8.725
CONTROL - TRT3	-15.023	-1.953	11.116
CONTROL - TRT1	-12.344	0.282	12.909
TRT1 - TRT2	-17.227	-4.392	8.443
TRT1 - TRT3	-15.305	-2.236	10.834
TRT1 - CONTROL	-12.909	-0.282	12.344

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 182.1037  
Critical Value of Dunnett's T= 2.110

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-6.124	4.110	14.344
TRT3 - CONTROL	-8.467	1.953	12.374
TRT1 - CONTROL	-10.350	-0.282	9.785

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
\*\*\*\*\*

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#### General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 59 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

\*\*\*\*\*  
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General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	25.939320	8.646440	0.12	0.9474
Error	55	3930.465511	71.463009		

Corrected Total 58 3956.404831

R-Square	C.V.	Root MSE	RESPDNSE Mean
0.006556	10.50025	8.4536	80.508

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	25.939320	8.646440	0.12	0.9474

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	RESPONSE	Pr >  T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	1 2 3 4
CONTROL	79.4782230	1	0.6096 0.6023 0.7437
TRT1	81.0384340	2	0.6096 0.9917 0.8710
TRT2	81.0707976	3	0.6023 0.9917 0.8630
TRT3	80.5156404	4	0.7437 0.8710 0.8630

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPDNSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 71.46301  
Critical Value of Studentized Range= 3.747

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2	- TRT1	-8.146	0.032	8.210
TRT2	- TRT3	-7.932	0.555	9.042
TRT2	- CONTROL	-6.457	1.593	9.642
TRT1	- TRT2	-8.210	-0.032	8.146
TRT1	- TRT3	-7.964	0.523	9.010
TRT1	- CONTROL	-6.489	1.560	9.610
TRT3	- TRT2	-9.042	-0.555	7.932
TRT3	- TRT1	-9.010	-0.523	7.964
TRT3	- CONTROL	-7.325	1.037	9.400
CONTROL	- TRT2	-9.642	-1.593	6.457
CONTROL	- TRT1	-9.610	-1.560	6.489
CONTROL	- TRT3	-9.400	-1.037	7.325

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
13. ANALYSIS DF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 71.46301  
Critical Value of Dunnett's T= 2.114

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2	- CONTROL	-4.832	1.593	8.017
TRT1	- CONTROL	-4.864	1.560	7.984
TRT3	- CONTROL	-5.637	1.037	7.712

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

\*\*\*\*\*  
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General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 61 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

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General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	40.395507	13.465169	0.41	0.7481
Error	57	1882.793213	33.031460		
Corrected Total	60	1923.188720			
	R-Square	C.V.	Root MSE	RESPONSE Mean	
	0.021004	6.713170	5.7473	85.612	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	40.395507	13.465169	0.41	0.7481

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	RESPONSE	Pr >  T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	1 2 3 4

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CONTROL	84.9834635	1	0.8977	0.5341	0.4344
TRT1	84.7210038	2	0.8977	0.4548	0.3656
TRT2	86.2754957	3	0.5341	0.4548	0.8654
TRT3	86.6391040	4	0.4344	0.3656	0.8654

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 33.03146  
Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3 - TRT2	-5.289	0.364	6.016
TRT3 - CONTROL	-3.911	1.656	7.222
TRT3 - TRT1	-3.648	1.918	7.484
TRT2 - TRT3	-6.016	-0.364	5.289
TRT2 - CONTROL	-4.174	1.292	6.758
TRT2 - TRT1	-3.912	1.554	7.021
CONTROL - TRT3	-7.222	-1.656	3.911
CONTROL - TRT2	-6.758	-1.292	4.174
CONTROL - TRT1	-5.115	0.262	5.640
TRT1 - TRT3	-7.484	-1.918	3.648
TRT1 - TRT2	-7.021	-1.554	3.912
TRT1 - CONTROL	-5.640	-0.262	5.115

PROHEXADIONE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 33.03146  
Critical Value of Dunnett's T= 2.110

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT3	-7.222	-1.656	3.911
CONTROL - TRT2	-6.758	-1.292	4.174
CONTROL - TRT1	-5.115	0.262	5.640

	TRT3	- CONTROL	-2.783	1.656	6.094
	TRT2	- CONTROL	-3.067	1.292	5.651
	TRT1	- CONTROL	-4.550	-0.262	4.025

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

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General Linear Models Procedure  
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 60 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

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General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

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General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	297.42651	99.14217	0.52	0.6694
Error	56	10650.13959	190.18106		
Corrected Total	59	10947.56610			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.027168	37.27444	13.791	36.998

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	297.42651	99.14217	0.52	0.6694

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

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General Linear Models Procedure  
 Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr >  T  H0: LSMEAN(i)=LSMEAN(j)	i/j	1	2	3	4
CONTROL	34.4096899	1 .		0.8261	0.3289	0.3370	
TRT1	35.4859714	2 0.8261			0.4459	0.4508	
TRT2	39.2911701	3 0.3289		0.4459	.	0.9840	
TRT3	39.3963618	4 0.3370		0.4508	0.9840	.	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 190.1811  
 Critical Value of Studentized Range= 3.745

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
TRT3 - TRT2	-13.732	0.105	13.943	
TRT3 - TRT1	-9.725	3.910	17.546	
TRT3 - CONTROL	-8.648	4.987	18.622	
TRT2 - TRT3	-13.943	-0.105	13.732	
TRT2 - TRT1	-9.319	3.805	16.929	
TRT2 - CONTROL	-8.243	4.881	18.006	
TRT1 - TRT3	-17.546	-3.910	9.725	
TRT1 - TRT2	-16.929	-3.805	9.319	
TRT1 - CONTROL	-11.834	1.076	13.987	
CONTROL - TRT3	-18.622	-4.987	8.648	
CONTROL - TRT2	-18.006	-4.881	8.243	
CONTROL - TRT1	-13.987	-1.076	11.834	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
 \*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for

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comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 190.1811  
Critical Value of Dunnett's T= 2.112

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT3 - CONTRDL	-5.891	4.987	15.864	
TRT2 - CONTRDL	-5.588	4.881	15.351	
TRT1 - CONTRDL	-9.223	1.076	11.376	

PROHEXADIDNE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVDRS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CDNTRL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 60 observations can be used in this analysis.

PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVDRS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2
TRT1		L3
TRT2		L4
TRT3		-L2-L3-L4

PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	319.98531	106.66177	0.63	0.5968
Error	56	9435.03574	168.48278		
Corrected Total	59	9755.02105			

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R-Square	C.V.	Root MSE	RESPONSE Mean
0.032802	36.28513	12.980	35.772

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	319.98531	106.66177	0.63	0.5968

PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr >  T	HD: LSMEAN(i)=LSMEAN(j)				
			i/j	1	2	3	4
CONTROL	33.0385671	1		0.7891	0.2851	0.2797	
TRT1	34.2720897	2	0.7891		0.4186	0.4061	
TRT2	38.0735878	3	0.2851	0.4186		0.9588	
TRT3	38.3287941	4	0.2797	0.4061	0.9588		

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIDNE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 168.4828  
Critical Value of Studentized Range= 3.745

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT3 - TRT2	-12.769	0.255	13.279	
TRT3 - TRT1	-8.777	4.057	16.890	
TRT3 - CONTROL	-7.544	5.290	18.124	
TRT2 - TRT3	-13.279	-0.255	12.769	
TRT2 - TRT1	-8.551	3.801	16.154	
TRT2 - CONTROL	-7.318	5.035	17.388	
TRT1 - TRT3	-16.890	-4.057	8.777	
TRT1 - TRT2	-16.154	-3.801	8.551	
TRT1 - CONTROL	-10.918	1.234	13.385	
CONTRDL - TRT3	-18.124	-5.290	7.544	
CONTROL - TRT2	-17.388	-5.035	7.318	
CONTRDL - TRT1	-13.385	-1.234	10.918	

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PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 168.4828  
 Critical Value of Dunnett's T= 2.112

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Upper Confidence Limit	
	Difference Between Means			
TRT3 - CONTROL	-4.948	5.290	15.528	
TRT2 - CONTROL	-4.819	5.035	14.889	
TRT1 - CONTROL	-8.461	1.234	10.928	

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTRL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 61 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0

LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## Dependent Variable: THICK

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.0005718	0.0001906	0.54	0.6598
Error	57	0.0202858	0.0003559		
Corrected Total	60	0.0208577			
		R-Square	C.V.	Root MSE	THICK Mean
		0.027416	5.392300	0.0189	0.3499

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	0.0005718	0.0001906	0.54	0.6598

PROHEXADIONE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
 17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
 Least Squares Means

LEVEL	THICK LSMEAN	Pr >  T  i/j 1 2 3 4			
		1	2	3	4
CONTROL	0.34506250	1	0.4566	0.3390	0.2426
TRT1	0.35006250	2	0.4566	0.8214	0.6498
TRT2	0.35160000	3	0.3390	0.8214	0.8187
TRT3	0.35321429	4	0.2426	0.6498	0.8187

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Tukey's Studentized Range (HSD) Test for variable: THICK

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 0.000356  
 Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit				Simultaneous Upper Confidence Limit			
	Difference Between Means							
TRT3 - TRT2	-0.016939		0.001614		0.020167			
TRT3 - TRT1	-0.015119		0.003152		0.021423			
TRT3 - CONTROL	-0.010119		0.008152		0.026423			
TRT2 - TRT3	-0.020167		-0.001614		0.016939			

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TRT2	- TRT1	-0.016406	0.001538	0.019481
TRT2	- CONTROL	-0.011406	0.006537	0.024481
TRT1	- TRT3	-0.021423	-0.003152	0.015119
TRT1	- TRT2	-0.019481	-0.001538	0.016406
TRT1	- CONTROL	-0.012651	0.005000	0.022651
CONTROL	- TRT3	-0.026423	-0.008152	0.010119
CONTROL	- TRT2	-0.024481	-0.006537	0.011406
CONTROL	- TRT1	-0.022651	-0.005000	0.012651

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
17. ANALYSIS OF EGGSHELL THICKNESS

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: THICK

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 0.000356  
Critical Value of Dunnett's T= 2.110

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Simultaneous Difference Between Means		Upper Confidence Limit									
	TRT3	- CONTROL	-0.006416	0.008152	0.022720	TRT2	- CONTROL	-0.007769	0.006537	0.020844	TRT1	- CONTROL	-0.009074	0.005000

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 59 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0

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LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: HATWT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	28.770969	9.590323	1.45	0.2374
Error	55	363.025641	6.600466		
Corrected Total	58	391.796610			
		R-Square	C.V.	Root MSE	HATWT Mean
		0.073433	7.211184	2.5691	35.627

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	28.770969	9.590323	1.45	0.2374

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure  
Least Squares Means

LEVEL	HATWT LSMEAN	Pr >  T  i/j	HO: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	34.500000	1	0.0954 0.0710 0.1662
TRT1	36.0666667	2	0.0954 0.8875 0.8216
TRT2	36.200000	3	0.0710 0.8875 0.7176
TRT3	35.8461538	4	0.1662 0.8216 0.7176

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HATWT

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 6.600466  
Critical Value of Studentized Range= 3.747

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - TRT1	-2.3521	0.1333	2.6187	
TRT2 - TRT3	-2.2254	0.3538	2.9331	
TRT2 - CONTROL	-0.7463	1.7000	4.1463	
TRT1 - TRT2	-2.6187	-0.1333	2.3521	
TRT1 - TRT3	-2.3587	0.2205	2.7997	
TRT1 - CONTROL	-0.8796	1.5667	4.0129	
TRT3 - TRT2	-2.9331	-0.3538	2.2254	
TRT3 - TRT1	-2.7997	-0.2205	2.3587	
TRT3 - CONTROL	-1.1954	1.3462	3.8877	
CONTROL - TRT2	-4.1463	-1.7000	0.7463	
CONTROL - TRT1	-4.0129	-1.5667	0.8796	
CONTROL - TRT3	-3.8877	-1.3462	1.1954	

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: HATWT

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 6.600466  
Critical Value of Dunnett's T= 2.114

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-0.2523	1.7000	3.6523	
TRT1 - CONTROL	-0.3857	1.5667	3.5190	
TRT3 - CONTROL	-0.6822	1.3462	3.3745	

## PROHEXADIDINE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Class Level Information

Class	Levels	Values
LEVEL	4	CONTRL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 59 observations can be used in this analysis.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0  
LEVEL CONTROL L2  
TRT1 L3  
TRT2 L4  
TRT3 -L2-L3-L4

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dependent Variable: SURVWT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	1368.8654	456.2885	0.66	0.5821
Error	55	38202.6939	694.5944		
Corrected Total	58	39571.5593			
	R-Square	C.V.	Root MSE	SURVWT Mean	
	0.034592	9.081617	26.355	290.20	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1368.8654	456.2885	0.66	0.5821

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

09:43 Thursday, June 25, 1998

## General Linear Models Procedure

## Least Squares Means

SURVWT		Pr >  T		H0: LSMEAN(i)=LSMEAN(j)
LSMEAN		i/j		1 2 3 4
CONTROL	294.812500	1	.0.2528	0.4372 0.9787
TRT1	283.866667	2	0.2528	0.7149 0.2665
TRT2	287.400000	3	0.4372	0.7149 .0.4454
TRT3	295.076923	4	0.9787	0.2665 0.4454 .

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

## PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

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## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: SURVWT

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 694.5944  
Critical Value of Studentized Range= 3.747

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-25.808	0.264	26.336
TRT3	- TRT2	-18.782	7.677	34.136
TRT3	- TRT1	-15.249	11.210	37.669
CONTROL	- TRT3	-26.336	-0.264	25.808
CONTROL	- TRT2	-17.682	7.413	32.507
CONTROL	- TRT1	-14.149	10.946	36.041
TRT2	- TRT3	-34.136	-7.677	18.782
TRT2	- CONTROL	-32.507	-7.413	17.682
TRT2	- TRT1	-21.963	3.533	29.030
TRT1	- TRT3	-37.669	-11.210	15.249
TRT1	- CONTROL	-36.041	-10.946	14.149
TRT1	- TRT2	-29.030	-3.533	21.963

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: SURVWT

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 55 MSE= 694.5944  
Critical Value of Dunnett's T= 2.114

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-20.543	0.264	21.072
TRT2	- CONTROL	-27.440	-7.413	12.615
TRT1	- CONTROL	-30.974	-10.946	9.082

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
20. ANALYSIS OF FOOD CONSUMPTION\*\*\*\*\*  
09:43 Thursday, June 25, 1998General Linear Models Procedure  
Class Level InformationClass Levels Values  
LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*  
09:43 Thursday, June 25, 1998General Linear Models Procedure  
Type I Estimable Functions for: LEVELEffect Coefficients  
INTERCEPT 0  
LEVEL CONTROL L2  
TRT1 L3  
TRT2 L4  
TRT3 -L2-L3-L4PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*  
09:43 Thursday, June 25, 1998

General Linear Models Procedure

Dependent Variable: FOOD  
Source DF Sum of Squares Mean Square F Value Pr > F  
Model 3 1191.9745 397.3248 0.86 0.4663  
Error 58 26747.1442 461.1577  
Corrected Total 61 27939.1187  
R-Square C.V. Root MSE FOOD Mean  
0.042663 15.47448 21.475 138.77Source DF Type I SS Mean Square F Value Pr > F  
LEVEL 3 1191.9745 397.3248 0.86 0.4663PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*  
09:43 Thursday, June 25, 1998General Linear Models Procedure  
Least Squares MeansLEVEL FOOD Pr > |T| HO: LSMEAN(i)=LSMEAN(j)  
LSMEAN i/j 1 2 3 4  
CONTROL 142.787500 1 0.9804 0.1743 0.4574  
TRT1 142.600000 2 0.9804 . 0.1820 0.4721

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 TRT2 132.173333 3 0.1743 0.1820 0.5395  
 TRT3 137.013333 4 0.4574 0.4721 0.5395

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 20. ANALYSIS OF FOOD CONSUMPTION  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: FOOD

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 461.1577  
 Critical Value of Studentized Range= 3.741

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Mean	Limit		Mean	Limit
CDNTROL - TRT1	-19.895	0.187	20.270		
CONTROL - TRT3	-14.641	5.774	26.169		
CONTROL - TRT2	-9.801	10.614	31.029		
TRT1 - CONTROL	-20.270	-0.187	19.895		
TRT1 - TRT3	-14.828	5.587	26.001		
TRT1 - TRT2	-9.988	10.427	30.841		
TRT3 - CONTRDL	-26.189	-5.774	14.641		
TRT3 - TRT1	-26.001	-5.587	14.828		
TRT3 - TRT2	-15.901	4.840	25.581		
TRT2 - CONTRDL	-31.029	-10.614	9.801		
TRT2 - TRT1	-30.841	-10.427	9.988		
TRT2 - TRT3	-25.581	-4.840	15.901		

PROHEXADIONE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
 20. ANALYSIS OF FOOD CONSUMPTION  
 \*\*\*\*  
 09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Dunnett's One-tailed T tests for variable: FOOD

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 461.1577  
 Critical Value of Dunnett's T= 2.108

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Mean	Limit		Mean	Limit
* TRT1 - CONTRDL	-16.192	-D.187	15.817		
TRT3 - CONTROL	-22.043	-5.774	10.495		

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 TRT2 - CONTROL -26.883 -10.614 5.655

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT  
 \*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

PRDHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT  
 \*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure

Dependent Variable: POSTM

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	213653.74	53413.43	6.41	0.0002
Error	57	475267.44	8338.03		
Corrected Total	61	688921.18			
R-Square		C.V.	Root MSE	POSTM Mean	
	0.310128	7.165685	91.313		1274.3

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL PREM	3	22576.97	7525.66	0.90	0.4456
	1	191076.77	191076.77	22.92	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL PREM	3	13592.75	4530.92	0.54	0.6546
	1	191076.77	191076.77	22.92	0.0001

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT  
 \*\*\*\*

09:43 Thursday, June 25, 1998

#### General Linear Models Procedure Least Squares Means

LEVEL	POSTM LSMEAN	Std Err LSMEAN	Pr >  T  H0:LSMEAN=0	LSMEAN Number
CONTROL TRT1	1281.88595	22.83272	0.0001	1
	1265.45681	22.83195	0.0001	2

TRT2	1255.42392	23.64559	0.0001	3
TRT3	1294.54380	23.59310	0.0001	4

Pr &gt; |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4
1	0.6128	0.4245	0.7012	
2	0.6128	0.7615	0.3792	
3	0.4245	0.7615	0.2471	
4	0.7012	0.3792	0.2471	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTM

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 8338.025  
Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-72.18	14.67	101.52
TRT3	- TRT1	-55.56	31.30	118.15
TRT3	- TRT2	-36.31	51.93	140.17
CONTROL	- TRT3	-101.52	-14.67	72.18
CONTROL	- TRT1	-68.81	16.63	102.06
CONTROL	- TRT2	-49.59	37.26	124.11
TRT1	- TRT3	-118.15	-31.30	55.56
TRT1	- CONTROL	-102.06	-16.63	68.81
TRT1	- TRT2	-66.21	20.64	107.49
TRT2	- TRT3	-140.17	-51.93	36.31
TRT2	- CONTROL	-124.11	-37.26	49.59
TRT2	- TRT1	-107.49	-20.64	66.21

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

\*\*\*\*\*  
09:43 Thursday, June 25, 1998

## General Linear Models Procedure

Dunnett's One-tailed T tests for variable: POSTM

NOTE: This test controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 8338.025  
Critical Value of Dunnett's T= 2.109

Comparisons significant at the 0.05 level are indicated by \*\*\*\*.

LEVEL Comparison		Simultaneous	Difference Between Means	Simultaneous
		Lower Confidence Limit		Upper Confidence Limit
TRT3	- CONTROL	-54.53	14.67	83.88
TRT1	- CONTROL	-84.70	-16.63	51.45
TRT2	- CONTROL	-106.47	-37.26	31.94

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure  
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 62 observations can be used in this analysis.

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## General Linear Models Procedure

Dependent Variable: POSTF

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	120702.97	30175.74	4.15	0.0051
Error	57	414467.41	7271.36		
Corrected Total	61	535170.39			
	R-Square	C.V.	Root MSE	POSTF Mean	
	0.225541	7.160689	85.272	1190.8	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	2903.12	967.71	0.13	0.9400
PREF	1	117799.86	117799.86	16.20	0.0002

Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	2612.27	870.76	0.12	0.9481
PREF	1	117799.86	117799.86	16.20	0.0002

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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 General Linear Models Procedure  
 Least Squares Means

LEVEL	POSTF LSMEAN	Std Err LSMEAN	Pr >  T  H0:LSMEAN=0	LSMEAN Number
CONTROL	1181.37024	21.31988	0.0001	1
TRT1	1199.39194	21.32062	0.0001	2
TRT2	1191.40119	22.03603	0.0001	3
TRT3	1191.25250	22.01876	0.0001	4
	Pr >  T  H0: LSMEAN(i)=LSMEAN(j)			
	i/j	1 2 3 4		
	1	0.5524	0.7448	0.7483
	2	0.5524	0.7954	0.7915
	3	0.7448	0.7954	0.9962
	4	0.7483	0.7915	0.9962

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

PROHEXADIONE-CALCIUM TECH.: REPRD. STUDY WITH THE MALLARD  
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTF

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 7271.358  
 Critical Value of Studentized Range= 3.743

Comparisons significant at the 0.05 level are indicated by '\*\*\*'.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - TRT2	-78.11	3.00	84.10
TRT1 - TRT3	-73.24	7.86	88.97
TRT1 - CONTROL	-61.97	17.81	97.60
TRT2 - TRT1	-84.10	-3.00	78.11
TRT2 - TRT3	-77.54	4.87	87.27
TRT2 - CONTROL	-66.29	14.82	95.92
TRT3 - TRT1	-88.97	-7.86	73.24
TRT3 - TRT2	-87.27	-4.87	77.54
TRT3 - CONTROL	-71.16	9.95	91.06
CONTROL - TRT1	-97.60	-17.81	61.97
CONTROL - TRT2	-95.92	-14.82	66.29
CONTROL - TRT3	-91.06	-9.95	71.16

PROHEXADIONE-CALCIUM TECH.: REPRO. STUDY WITH THE MALLARD  
 22. CDVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure

Dunnett's One-tailed T tests for variable: POSTF

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NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 7271.358  
 Critical Value of Dunnett's T= 2.109

Comparisons significant at the 0.05 level are indicated by '\*\*\*'.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-45.76	17.81	81.39
TRT2 - CONTROL	-49.81	14.82	79.44
TRT3 - CONTROL	-54.68	9.95	74.58

Prohexadione calcium

DER MRID 444577-28

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